 CARLO GAVAZZI SPACE SpA		AMS02-TCS		1 Doc.N° : NCR-TCS-CGS-C-007 N C R ref Rev.: 1 Date: 17.10.2008 Page 1 of 1 attach: 1,2	
		NON CONFORMANCE REPORT			

2 <b>NCR Title:</b> HEATERS DE-BONDING					
--	--	--	--	--	--

IDENTIFICATION	3 <b>Supplier</b> AIDC	4 <b>Purchase Order N°.</b> I/008/08/0	5 <b>Model</b> FM	6 <b>Subsystem</b> TCS	7 <b>Procedure/Work Item N°</b>
	8 <b>NC ITEM Identification</b> TRACKER RADIATOR heaters	9 <b>Drawing N°.</b> Rev. 25-AMS-000.00.00 Rev A Sh 5 /6	10 <b>P.N. / C.I. N°</b> See the Non Conformance Description	11 <b>Serial N°</b> N.A.	
	12 <b>Next Higher Unit Id.</b> TRACKERRADIATOR ASSY (AFE for CGS)	13 <b>Drawing N°.</b> Rev. 25-AMS-000.00.00 Rev. A	14 <b>P.N. / C.I. N°</b> 25-AMS-000.00.00	15 <b>Serial N°.</b> 01 and 02	
	16 <b>NON CONFORMANCE Detected During:</b> RECEIVING INSP. <input type="checkbox"/> MANUFACT. <input type="checkbox"/> ASSEMBLY/INTEGRATION <input type="checkbox"/> FINAL INSPECTION <input type="checkbox"/> TEST <input type="checkbox"/> RECEIVING INSPECTION. <input checked="" type="checkbox"/>				

DESCRIPTION	17 <b>Initiator, Dept., Date, Signature</b> C. Vettore 17.10.2008	19 <b>Requirements violated</b>
	18 <b>Description of NON CONFORMANCE</b> Some of the heaters mounted on the TRACKER Radiators (25-AMS-000.00.00 Rev.A) present unusual de-bonding areas. The de-bonding aspects are of different types, namely single bubbles, diagonal wrinkles and half-moon shape peeling-off near the lead exits. The heaters affected by these de-bonding are described in the annex of this NCR	

INTERNAL NRB DISPOSITIONS	20 <b>INTERNAL NRB Dispositions:</b> To discuss the points in a dedicate NRB to evaluate the possible impacts (if any)		21 <b>Verifications</b> OK See Annex 2 16.01.2009
	22 <b>Suspected cause of NC:</b> HANDLING <input type="checkbox"/> TRANSPORTATION <input type="checkbox"/> TEST EQUIPMENT <input type="checkbox"/> TOOLS <input type="checkbox"/> SW <input type="checkbox"/> DESIGN <input type="checkbox"/> OPERATOR/PROCEDURE ERROR <input type="checkbox"/> PART <input type="checkbox"/> MATERIAL <input type="checkbox"/> PROCESS <input type="checkbox"/> TEST <input type="checkbox"/> OTHER..... <input type="checkbox"/>		
	23 <b>Classification</b> MINOR <input type="checkbox"/> MAJOR <input checked="" type="checkbox"/>		
	24 <b>Corrective/Preventive Actions:</b>		
	25 <b>REQUEST FOR WAIVER</b> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> N°		26 <b>Analysis Required</b> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> N°
	27 <b>Other related documents:</b>		

INTERNAL NRB DISPOSITIONS	Department:	28 <b>P.A.</b>	29 <b>Syst. Engineering</b>	30 <b>P. M.</b>	30	31 <b>C.C.</b>
	Name:	L. Cremonesi	C. Vettore	M. OLIVIER		C. Cinquepalmi
	Signature:	<i>L. Cremonesi</i>	<i>C. Vettore</i>	<i>M. Oliver</i>		<i>C. Cinquepalmi</i>
	Date:	25.10.08	28.10.2008	25.10.2008		30.10.08

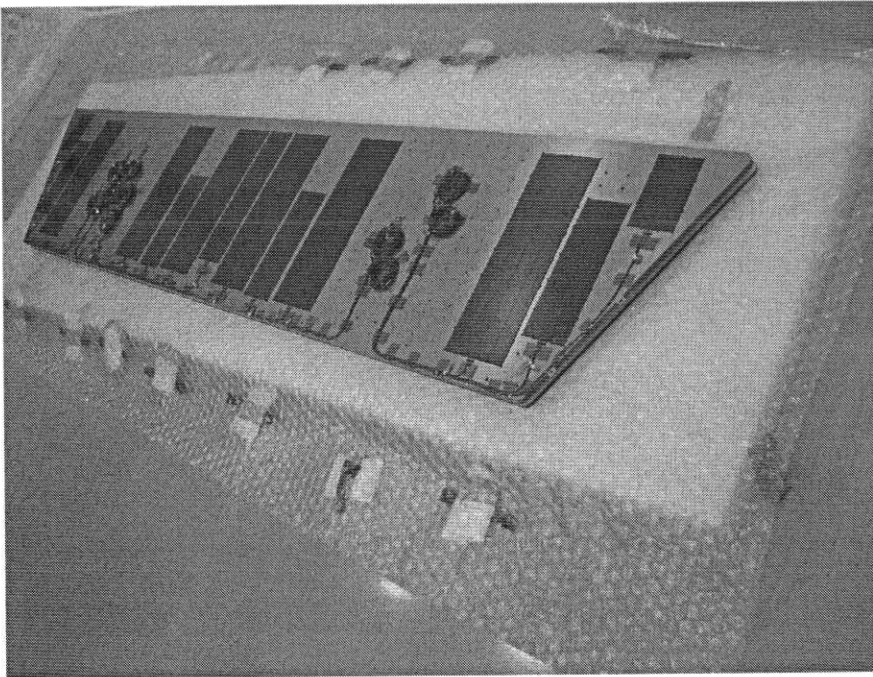
CUSTOMER/HIGHER LEVEL CONTRACTOR NRB DISPOSITIONS	32 <b>CUSTOMER/HIGHER LEVEL CONTRACTOR NRB Dispositions (Class Major Only):</b>		21 <b>Verifications</b>
	33 <b>Finally determined Cause of NC</b>		34 <b>Corrective/Preventive Actions:</b>
	35 <b>Customer/HLContractor Approval:</b>		
	36 <b>CLOSE OUT CERTIFICATION</b>		

Department:					CGS PA/QA	PA/QA Stamp
Name:						
Signature:						
Date:						

### TRACKER RADIATORS Heaters

The following picture shows the TRACKER radiators heater lay-out according to TRACKER heater installation drawing 25-AMS-000.00.00 Sheet 5 of 6.

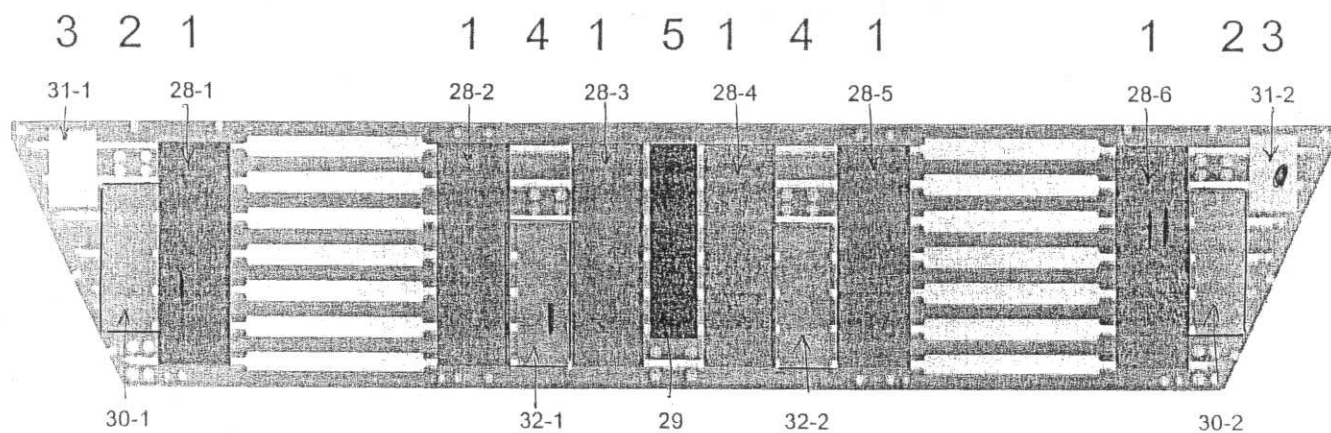


S/N 2



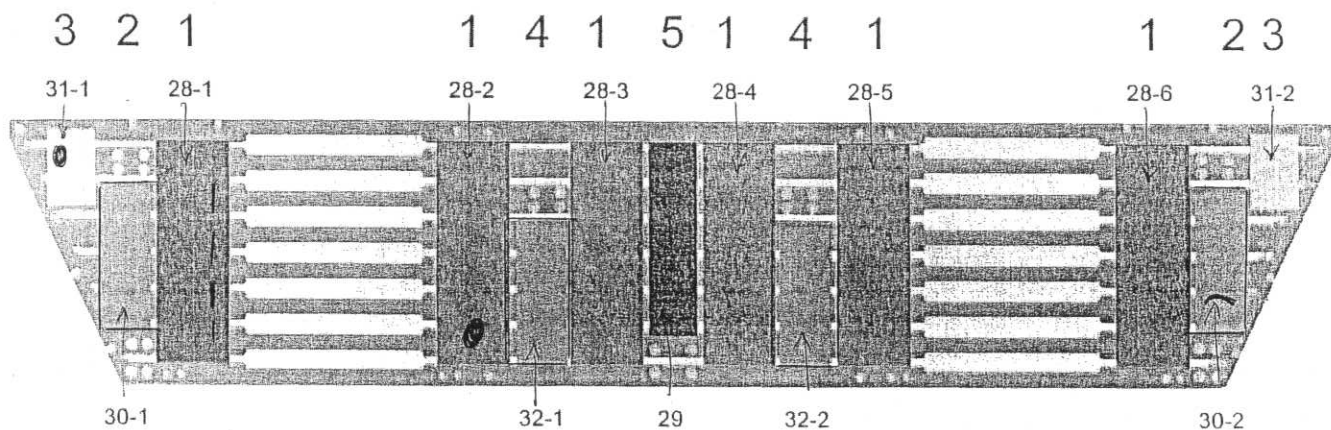
S/N 1

The following pictures show the heater part ballooning for the heater part number identification together with the patches which present unusual defects.



S/N 1

Tracker Radiator Heater Arrangement



S/N 2

Tracker Radiator Heater Arrangement

As already remarked by Mr. Joe Burger during their inspection on last August the debonded patches areas are very small and they cannot be seen with pictures. They are here summarized to trace the defect and to identify a possible recovery action.

The heaters that present unusual defects are listed in the following table together with the defect type and picture reference if any.

**S/N 1**

Heater number	Defect
28-1	Bubbles
32-1	Straight long bubble
28-6	Straight long bubble
31-2	Bubbles

**S/N 2**

Heater number	Defect
31-1	Bubbles
28-1	Straight long bubble
28-2	Bubbles
30-2	Bubbles

Most of the heaters present a “half-moon” debonding area in correspondance of the soldered wires both for S/N 1 and for S/N 2.

**Luigi Cremonesi**

**Da:** Marchetti Ernesto [ernesto.marchetti@asi.it]  
**Inviato:** lunedì 19 gennaio 2009 13.41  
**A:** Joseph Burger; mmolina@cgspace.it; molivier@cgspace.it; cvettore@cgspace.it; lcremonesi@cgspace.it; John.Heilig@escg.jacobs.com; craig.clark@escg.jacobs.com  
**Cc:** r.battiston@tiscali.it; adellacqua@cgspace.it; jvanes@nlr.nl; Russo Enrico  
**Oggetto:** I: please help me0

On January 16, 2009, was held the Non Conformance Review Board (NRB), related to the below mentioned NCR. The following persons took part to this teleconference :

- Joseph Burger CERN
- E. Marchetti ASI
- M. Molina CGS
- M. Olivier CGS
- C. Vettore CGS
- L. Cremonesi CGS;
- John Heilig
- Craig Clark

The following Recovery Actions have been agreed upon :

- 1) NCR-TCS-CGS-C-001 (Mj) "WAKE RADIATOR Heaters de-bonding"  
DISPOSITION:

- a) Cover all the Heaters with Chofoil (PN: CCJ-36-201-xxxx);
- b) Heaters that are possibly directly exposed to sunlight shall be covered also with Kapton tape on top of the aluminum tape;  
CGS shall provide guidelines for aluminum and Kapton tape application;

The recovery action shall be performed by AMS collaboration and the radiators shall be ready for final inspection to ASI [3] months before the System Enviromental Test

- 2) NCR-TCS-CGS-C-002 (Mi) "TRACKER RADIATOR Surface Treatment"  
DISPOSITION:

- a) AMS shall ask AIDC to provide CoCs of the surface treatment.

- 3) NCR-TCS-CGS-C-003 (Mj) "WAKE RADIATOR Sharp Edge"  
DISPOSITION:

- a) Apply a protective cuff on top of the 2 corners. CGS to provide a concept sketch;
- b) AMS shall investigate with NASA if there is also need for protection on the radiator edges.

- 4) NCR-TCS-CGS-C-004 (Mj) "MECHANICAL PARTS"  
DISPOSITION

- a) AMS shall remove the excess glue with dedicated tools;
- b) There is no need to clean the helicoils, AMS shall install the missing ones;
- c) AMS shall remove the paint according to the manufacturer's (MAP) procedure and apply Alodine by brush.

- 5) NCR-TCS-CGS-C-005 (Mi) "RADIATORS ADPs"  
DISPOSITION:

- a) AMS has provided the Missing documents on FTP.

- 6) **NCR-TCS-CGS-C-006** (Mj) "RAM RADIATOR Heaters de-bonding"  
DISPOSITION:

- a) Same as NCR-TCS-CGS-C-001

- 7) **NCR-TCS-CGS-C-007** "(Mj)TRACKER RADIATORs Heaters de-bonding"  
DISPOSITION:  
a) Same as NCR-TCS-CGS-C-001

Best Regards

ERNESTO MARCHETTI  
INGEGNERIA DI SISTEMA E QUALITÀ  
AGENZIA SPAZIALE ITALINA  
VIALE LIEGI, 26  
00198 ROMA  
PH.: +39-06-8567-370  
CELL.: +39.3474562568  
[ERNESTO.MARCHETTI@ASI.IT](mailto:ERNESTO.MARCHETTI@ASI.IT)